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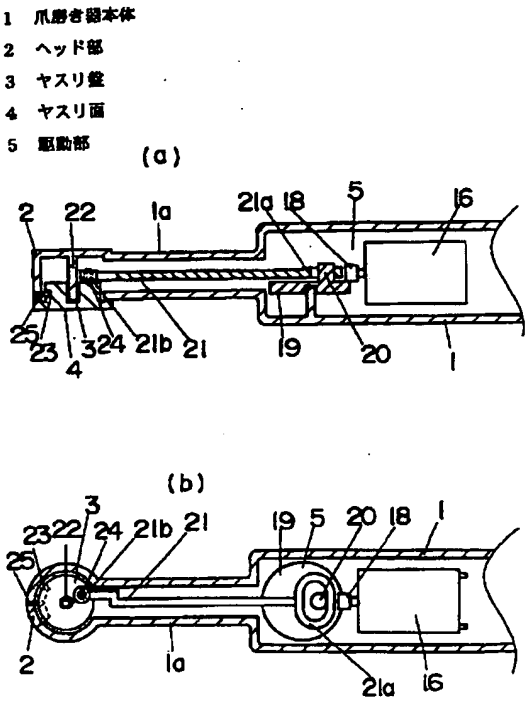
(54)【発明の名称】　電動式爪磨き器

(57)【要約】
【課題】　ヤスリ面を爪の表面に接触させ易くすると共に、爪の表面の綺麗な仕上がりも期待できる電動式爪磨き器を提供する。
【解決手段】　爪磨き器本体１から突出した先端にヘッド部２を設け、ヘッド部２に先端方向と略直交した回転軸芯を有するヤスリ盤３を回動自在に配置し、上記ヤスリ盤３の表面に爪の表面を接触させるヤスリ面４を形成し、ヤスリ盤３の裏面と連結してヤスリ盤３に回転揺動運動を与える駆動部５を爪磨き器本体１に設けた。



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【特許請求の範囲】

【請求項1】　爪磨き器本体から突出した先端にヘッド部を設け、ヘッド部に先端方向と略直交した回転軸芯を有するヤスリ盤を回動自在に配置し、上記ヤスリ盤の表面に爪の表面を接触させるヤスリ面を形成し、ヤスリ盤の裏面と連結してヤスリ盤に回転揺動運動を与える駆動部を爪磨き器本体に設けたことを特徴とする電動式爪磨き器。

【請求項2】　ヤスリ盤を略円盤状に形成し、上記ヤスリ盤の表面の中心に凹所を穿設すると共に上記凹所の外周側の表面にヤスリ面を設けたことを特徴とする請求項1に記載の電動式爪磨き器。

【請求項3】　ヤスリ盤を略円盤状に形成し、上記ヤスリ盤の表面中心に凹所を穿設すると共に上記凹所の外周側の表面にヤスリ面を設け、上記凹所に爪磨き用オイルを含ませた潤滑部材を配置したことを特徴とする請求項1または2のいずれかに記載の電動式爪磨き器。

【請求項4】　ヤスリ盤の裏面方向のヘッド部に押釦を設け、上記押釦の操作で上記潤滑部材をヤスリ盤の表裏方向に動かし得るようにしたことを特徴とする請求項3に記載の電動式爪磨き器。

【請求項5】　円盤状のヤスリ盤の表面にヤスリ面盤を装着し、ヤスリ盤の回転軸芯を中心とした略扇形状で上記回転軸芯に対して点対称位置に配置した2種類の粗ヤスリ面を上記ヤスリ面盤の表面に設け、ヤスリ面盤の表面の約半分を被覆するカバー体をヘッド部に設け、一方の粗ヤスリ面を表面に露出すると共に他方の粗ヤスリ面をカバー体で隠すようにヤスリ面盤をヤスリ盤に反転自在にし、ヤスリ盤の揺動回転運動が（180°－粗ヤスリ面の略扇形の中心角度）／2以下の角度の範囲で行われるようにしたことを特徴とする請求項1乃至請求項4のいずれかに記載の電動式爪磨き器。

【請求項6】　ヤスリ盤の約半分に切欠部を設け、表裏に種類の違う粗ヤスリ面を設けた粗ヤスリ片を上記切欠部に蝶番等を介して回転自在に取り付け、ヤスリ盤の表面に上記2種類の粗ヤスリ面の一方を選択的に露出したことを特徴とする請求項1乃至請求項4のいずれかに記載の電動式爪磨き器。

【請求項7】　円盤状のヤスリ盤の側面に爪の形作り用ヤスリ面を設けたことを特徴とする請求項1乃至請求項6のいずれかに記載の電動式爪磨き器。

【請求項8】　円盤状のヤスリ盤の側面に甘皮押し用の突起を設けたことを特徴とする請求項1乃至請求項7のいずれかに記載の電動式爪磨き器。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、爪の表面を磨いたり、爪の先端形状を整えたりする爪の手入れのための電動式爪磨き器に関する発明である。

【0002】

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【従来の技術】従来から、爪の表面を磨いたり、爪の先端形状を整えたりするような爪の手入れのための電動式爪磨き器には、図12や図13に示すものが知られている。この図12や図13に示すものは、いずれも爪磨き器本体1からヤスリ面4を備えたヤスリ棒30が先端に向って突設してあり、このヤスリ棒30が爪磨き器本体1に設けられた駆動部と連結して所定の運動をするものである。図12に示すものは、ヤスリ棒30を板状に形成すると共に、この板面上の先端部分に爪に接触させるヤスリ面4を設けてある。そして、このヤスリ棒30は先後方向に往復直線運動をするものである。また、図13に示すものは、ヤスリ棒30を円柱状に形成すると共に、この円柱側面に爪に接触させるヤスリ面4を設けているものである。そして、このヤスリ棒30は先後方向の回転軸芯周りの回転運動をするものである。

【0003】

【発明が解決しようとする課題】しかしながら、図12に示す前者の例においては、爪の伸長方向に対して略直交する方向にヤスリ面4の往復直線運動を沿わせて使用されることが多いものであり、爪の伸長方向に対して略直交する方向にのみ爪の表面が磨かれるものであるので、爪の表面の仕上がりに時間がかかったり、爪に伝わる振動が大きいものであったり、爪の表面と接触しているヤスリ面が使用者から見えにくい、といった問題があった。また、図13に示す後者の例においては、円柱の側面にヤスリ面4が設けられているので、爪の表面とヤスリ面4とが線接触してしまうものであり、爪の表面にかかる面圧を大きくしてしまい、ヤスリ面4で爪の表面を削ってしまったりして、爪の表面の仕上がりが汚いものになってしまったり、爪の表面方向に軽く突出するような突状面である爪の表面の形状に対しては突状面のヤスリ面4を沿わせるように接触させることができないものなので、上記ヤスリ面4を爪の表面に接触させにくい、といった問題があるものであった。

【0004】本発明は上記の点に鑑みてなされたものであり、ヤスリ面を爪の表面に接触させ易くすると共に、爪の表面の綺麗な仕上がりも期待できる電動式爪磨き器を提供することを課題とするものである。

【0005】

【課題を解決するための手段】上記課題を解決するために本発明の請求項1に係る電動式爪磨き器は、爪磨き器本体1から突出した先端にヘッド部2を設け、ヘッド部2に先端方向と略直交した回転軸芯を有するヤスリ盤3を回動自在に配置し、上記ヤスリ盤3の表面に爪の表面を接触させるヤスリ面4を形成し、ヤスリ盤3の裏面と連結してヤスリ盤3に回転揺動運動を与える駆動部5を爪磨き器本体1に設けたことを特徴とする。これにより、爪磨き器本体1から突出した先端のヘッド部2に先端方向と略直交した方向に面を成したヤスリ面4を設けたので、ヤスリ面4と爪の表面との接触を面接触にする

ことができ、ヤスリ面４を爪の表面に接触し易くすると共に、仕上がりに時間をかけない、使い勝手のよい電動式爪磨き器にできるものであり、また、ヤスリ面４と爪の表面との面接触はヤスリ面４と爪の表面とを適度な面圧で接触できるものであり、先端方向と略直交した回転軸芯を有すると共に上記回転軸芯周りに回転揺動運動をするヤスリ盤３の表面に設けたヤスリ面４は、ヤスリ盤３と共に回転軸芯周りの回転揺動運動をするものであるので、ヤスリ面４が爪の表面を適度な面圧で磨くことになり、爪に伝わる振動を小さくすると共に、爪の表面の仕上がりを綺麗にできるものである。

【０００６】また、本発明の請求項２に係る電動式爪磨き器は、請求項１において、ヤスリ盤３を略円盤状に形成し、上記ヤスリ盤３の表面の中心に凹所６を穿設すると共に上記凹所６の外周側の表面にヤスリ面４を設けたことを特徴とする。これにより、ヤスリ面４を爪の表面の形状に合わせて安定して接触させることができるものであり、また、ヤスリ面４と爪の表面との接触する部分も使用者から見易くするものであり、使い勝手のよい電動式爪磨き器にできるものである。

【０００７】また、本発明の請求項３に係る電動式爪磨き器は、請求項１または請求項２のいずれかにおいて、ヤスリ盤３を略円盤状に形成し、上記ヤスリ盤３の表面の中心に凹所６を穿設すると共に上記凹所６の外周側の表面にヤスリ面４を設け、上記凹所６に爪磨き用オイルを含ませた潤滑部材７を配置したことを特徴とする。これにより、爪の表面と潤滑部材７を接触させて爪の表面に爪磨き用オイルを塗布しながらヤスリ面４で爪の表面を磨くことができるものであり、更に、爪の表面の仕上がりを綺麗にできるものである。

【０００８】また、本発明の請求項４に係る電動式爪磨き器は、請求項３において、ヤスリ盤３の裏面方向のヘッド部２に押釦８を設け、上記押釦８の操作で上記潤滑部材７をヤスリ盤３の表裏方向に動かし得るようにしたことを特徴とする。これにより、必要なときにだけ、押釦８を操作して上記潤滑部材７を爪の表面と接触させることができて爪磨き用オイルを爪の表面に塗布することができるものであり、爪の表面の爪磨きを効率良くするものであり、また、爪の表面の仕上がりを綺麗にできるものである。

【０００９】また、本発明の請求項５に係る電動式爪磨き器は、請求項１乃至請求項４のいずれかにおいて、円盤状のヤスリ盤３の表面にヤスリ面盤９を装着し、ヤスリ盤３の回転軸芯を中心とした略扇形状で上記回転軸芯に対して点対称位置に配置した２種類の粗ヤスリ面１０ａ，１０ｂを上記ヤスリ面盤９の表面に設け、ヤスリ面盤９の表面の約半分を被覆するカバー体１１をヘッド部２に設け、一方の粗ヤスリ面１０ａを表面に露出すると共に他方の粗ヤスリ面１０ｂをカバー体１１で隠すようにヤスリ面盤９をヤスリ盤３に反転自在にし、ヤスリ盤３の揺動回転運動が（１８０°－粗ヤスリ面の略扇形の中心角度）／２以下の角度の範囲で行われるようにしたことを特徴とする。これにより、円盤状のヤスリ盤３の表面にヤスリ面盤９を装着し、ヤスリ盤３の回転軸芯を中心とした略扇形状に形成して上記回転軸芯に対して点対称位置に配置した２種類の粗ヤスリ面１０ａ，１０ｂを上記ヤスリ面盤９の表面に設け、ヤスリ面盤９の表面の約半分を被覆するカバー体１１をヘッド部２に設けたことから、上記２種類の粗ヤスリ面１０ａ，１０ｂのうち一つの粗ヤスリ面１０ａのみ表面に露出させることができるものであり、また、ヤスリ面盤９がヤスリ盤３に対して反転自在に装着されることから、表面に露出させる一方の粗ヤスリ面１０ａを他方の粗ヤスリ面１０ｂに簡単に変更できるものであり、また、ヤスリ盤３の揺動回転運動が（１８０°－粗ヤスリ面の略扇形の中心角度）／２以下の角度の範囲で行われるようにしたことから、ヤスリ盤３が回転揺動運動をしても一方の粗ヤスリ面１０ａのみを表面に露出させ続けることができるものであり、１つの電動爪磨き器で２種類の粗ヤスリ面を選択的に使うことができるために使い勝手のよい電動爪磨き器にするものである。

【００１０】また、本発明の請求項６に係る電動式爪磨き器は、請求項１乃至請求項４のいずれかにおいて、ヤスリ盤３の約半分に切欠部１２を設け、表裏に種類の違う粗ヤスリ面１０ａ，１０ｂを設けた粗ヤスリ片１３を上記切欠部１２に蝶番１４等を介して回転自在に取り付け、ヤスリ盤３の表面に上記２種類の粗ヤスリ面１０ａ，１０ｂの一方を選択的に露出したことを特徴とする。これにより、ヤスリ盤３の半分に切欠部１２を設け、表裏に種類の違う粗ヤスリ面１０ａ，１０ｂを設けた粗ヤスリ片１３を上記切欠部１２に蝶番１４等を介して回転自在に取り付けたことで、ヤスリ盤３の表面に上記２種類の粗ヤスリ面１０ａ，１０ｂの一方を選択的に露出させることができ、１つの電動爪磨き器で２種類の粗ヤスリ面を選択的に使うことができるために使い勝手のよい電動爪磨き器にするものである。

【００１１】また、本発明の請求項７に係る電動式爪磨き器は、請求項１乃至請求項６のいずれかにおいて、円盤状のヤスリ盤３の側面に爪の形作り用ヤスリ面１５を設けたことを特徴とする。これにより、一つの電動式爪磨き器で、爪の表面を磨くことと爪の先端部の形作りを行い得るものであり、効率良い爪の手入れを行い得るものである。

【００１２】また、本発明の請求項８に係る電動式爪磨き器は、請求項１乃至請求項７のいずれかにおいて、円盤状のヤスリ盤３の側面に甘皮押し用の突起１６を設けたことを特徴とする。これにより、一つの電動式爪磨き器で、爪の表面を磨くことと甘皮押しの両方を行い得るものであり、効率よい爪の手入れを行い得るものである。

【００１３】

【発明の実施の形態】以下、本発明を添付図面に示す実施形態に基づいて説明する。

【００１４】図１乃至２に本発明の実施の形態の例を示す。電動式爪磨き器は、爪磨き器本体１から先端方向に管状に形成したネック部１ａを突出し、上記ネック部１ａの先端にヘッド部２を設けたものである。爪磨き器本体１には、モータ１６，クランク機構等からなる駆動部５を内装するものである。このクランク機構は、モータ１６の回転駆動を先後方向の往復直線運動に変換するものである。具体的に言うと、モータ１６の回転軸にはピニオンギア１８を装着し、上記ピニオンギア１８にはフェイスギア１９を隣接し、上記フェイスギア１９の上面にはフェイスギア１９の回転軸芯から離れた位置に偏芯突起２０を突設し、先端をヘッド部２に連接させるクランク棒２１の環状部２１ａと上記偏芯突起２０を遊嵌している。これにより、モータ１６の回転駆動を受けてクランク棒２１が先後方向の往復直線運動をするものである。なお、このクランク棒２１はネック部１ａに内装され、クランク棒２１の先端をヘッド部２のヤスリ盤３と連結し、上記ヤスリ盤３に先後方向の往復直線運動を伝動させるものである。

【００１５】ヘッド部２はネック部１ａと連結し、先端方向と略直交した方向に開口する有底筒状に形成されたものであり、その内部には先端方向と略直交する方向に回転軸２２を突設し、円盤状に形成されたヤスリ盤３をヘッド部２の上記開口を塞ぐように先端方向と略直交した方向に面を成すように上記回転軸２２に回動自在に装着しているものである。ヤスリ盤３の表面には爪の表面を接触させるヤスリ面４を設けると共に、ヤスリ盤３の裏面には回転軸２２から離れた位置に伝動ピン２４を突設している。また、ヤスリ盤３の側面のヘッド部２に収納される部分の一部には案内溝２３が穿設されているものである。上記伝動ピン２４はクランク棒２１の先端に設けたピン連結部２１ｂと回動自在に連結されるものであり、クランク棒２１の先後方向の往復直線運動をヤスリ盤３に伝達し、ヤスリ盤３は回転軸２２を中心とする回転揺動運動をするものである。なお、上記案内溝２３にはヘッド部２の側面から内方に突出させた案内ピン２５を挿入し、ヤスリ盤３の抜け止めをしているものである。上記のような構成をした電動式爪磨き器は、モータ１６を回転駆動させると、クランク機構を介して上記駆動がヤスリ盤３に伝達され、上記ヤスリ盤３は先端方向と略直交した回転軸２２周りの回転揺動運動を続けるものである。

【００１６】このような電動式爪磨き器は、爪磨き器本体１を一方の手で持って、ヘッド部２のヤスリ面４を他方の手等の爪の表面に接触させて、爪の表面を磨くものである。上述したように、ヘッド部２のヤスリ面４は電動式爪磨き器の先端方向と略直交した方向に面を成したものであり、このヤスリ面４に爪の表面を接触させると面接触をして接触できるものであるので、ヤスリ面４を爪の表面に接触し易く、また、ヤスリ面４と爪の表面を面接触にして爪の表面を磨く範囲も大きくとることができるので、仕上がりに時間をかけないで済むことができるものであり、また、ヤスリ面４と爪の表面とを適度な面圧で接触させて爪の表面を磨くことで、仕上がりも綺麗なものとすることができるものである。

【００１７】以下、実施の形態の他例について説明する。以下の実施の形態の他例は上記の実施の形態の例の一部を変化させたものであるので、重複する部分の説明は省略し、相違点を中心に述べることにする。

【００１８】図３に示す実施の形態の他例は、ヤスリ盤３の表面の中心に凹所６を穿設すると共に上記凹所６の外周側の表面にヤスリ面４を設けたものである。このようにすることで、指の上方に軽く突起する突状面である爪の表面の突状面を凹所６に軽く収納することで、ヤスリ面４を爪の表面に沿わせるように更に大きく面接触させることができ、仕上がりを更に綺麗すると共に、仕上がりにかかる時間も短縮することができ、また、ヤスリ面４と爪の表面との接触する部分も使用者から見易くすることができて、電動式爪磨き器の使い勝手を向上させるものである。

【００１９】図４に示す実施の形態の他例は、ヤスリ盤３の表面の中心に凹所６を穿設すると共に上記凹所６の外周側の表面にヤスリ面４を設け、上記凹所６に爪磨き用オイルを含ませた潤滑部材７を配置したものである。このようにすることで、爪の表面に爪磨き用オイルを塗布しながらヤスリ面４で爪の表面を磨くことができるものであり、更に、爪の表面の仕上がりを綺麗にできるものである。

【００２０】図５に示す実施の形態の他例は、ヤスリ盤３の裏面方向のヘッド部２の端部に押釦８を設け、上記押釦８の操作で爪磨き用オイルを含ませた潤滑部材７をヤスリ盤３の表裏方向に動かし得るようにしたものである。これは、回転軸２２の一端に押釦８を設けると共に他端に爪磨き用オイルを含ませた潤滑部材７を取り付け、上記回転軸２２をヘッド部２及びヤスリ盤３に挿通し、潤滑部材７をヤスリ盤３の凹所６に位置させると共に押釦８をヘッド部２のヤスリ盤３の裏面方向の外部に位置させ、押釦８とヘッド部２との間にバネ２６を介在させたものである。このようにすることで、押釦８をヘッド部に押し込むことで潤滑部材７が凹所６からヤスリ盤３の表面方向に突出するものであり、必要なときにだけ、押釦８を操作して上記潤滑部材７を爪の表面に接触させて爪磨き用オイルを爪の表面に塗布することができるものであり、爪の表面の爪磨きを効率良くするものであり、また、爪の表面の仕上がりを綺麗にできるものである。

【００２１】図６及び図７に示す実施の形態の他例は、

ヤスリ盤３の表面に装着したヤスリ面盤９の表面に２種類の粗ヤスリ面１０ａ，１０ｂを形成し、上記２種類の粗ヤスリ面１０ａ，１０ｂのうち一つを選択的にヤスリ面盤９の表面に露出させると共に回転揺動させたものである。詳述すると、ヤスリ盤３同様に円盤状に形成したヤスリ面盤９の表面に、ヤスリ面盤９の中心点を中心とする略扇形状で、且つ、上記中心点に対して点対称位置に２種類の粗ヤスリ面１０ａ，１０ｂを配置している。この粗ヤスリ面の略扇形状の中心角度は少なくとも１８０°未満である。ヤスリ面盤９は裏面に軸９ａを突出させると共に上記軸の先端に係止片９ｂを設けている。そして、係止片９ｂの外周縁には２つの係止突起９ｃ，９ｃが係止片９ｂの対向位置に外周方向に突設している。また、ヤスリ盤３には係止凹部２７を穿設し、上記係止凹部２７には係止突起受け部２７ａを設けている。このように形成されたヤスリ面盤９は、係止片９ｂを係止凹部２７に挿入し、ヤスリ面盤９をヤスリ盤３の表面に装着している。このとき、係止突起９ｃ，９ｃのうちのいずれか一つを係止突起受け部２７ａに係止させているものである。また、上記ヤスリ面盤９の表面の約半分を被覆するカバー体１１をヘッド部２に設けている。このカバー体１１を設けることで、粗ヤスリ面１０ａ，１０ｂのうちのいずれか一つの粗ヤスリ面１０ａだけを表面に露出するようになる（他方の粗ヤスリ面１０ｂはカバー体１１で隠れている）。ここで、ヤスリ面盤９をヤスリ盤３に対して回動させ、係止突起９ｃ，９ｃのうちの先に係止突起受け部２７ａに係止させたものではない他方の一つの係止突起９ｃを係止突起受け部２７ａに係止させることで、他方の粗ヤスリ面１０ｂを表面に露出させることができる。このようにヤスリ面盤９はヤスリ盤３に反転自在に装着しているものである。また、ヤスリ盤３の揺動回転運動が（１８０°－粗ヤスリ面の略扇形の中心角度）／２以下の角度の範囲で行われるようにしている。これにより、ヤスリ盤３が回転揺動運動をしても表面に露出された一方の粗ヤスリ面１０ａのみを表面に露出させ続けることができるものである。このように構成した電動爪磨き器は、１つの電動爪磨き器で２種類の粗ヤスリ面１０ａ，１０ｂを選択的に使用することができるために使い勝手を向上させることができるものである。

【００２２】図８及び図９に示す実施の形態の他例は、ヤスリ盤３の半分に切欠部１２を設け、表裏に種類の違う粗ヤスリ面１０ａ，１０ｂを設けた粗ヤスリ片１３を上記切欠部１２に蝶番１４等を介して回転自在に取り付けたものである。この粗ヤスリ片１３の蝶番１４との接続部分と反対側の端部には引っ掛け突起２８を設けてあり、また、ヤスリ盤３の切欠部１２を設けない残りの半分の部分の側面に引っ掛け凹部２９を穿設してある。図９のように、粗ヤスリ片１３を蝶番１４で折り返した際に、粗ヤスリ片１３の引っ掛け突起２８をヤスリ盤３の引っ掛け凹部２９に係止させることで、粗ヤスリ片１３を蝶番１４で折り返した状態を維持できるものである。このように構成した電動式爪磨き器は、ヤスリ盤３の表面に上記２種類の粗ヤスリ面１０ａ，１０ｂの一方を選択的に露出させることができ、１つの電動爪磨き器で２種類の粗ヤスリ面を選択的に使うことができるために使い勝手を向上させることができるものである。

【００２３】図１０に示す実施の形態の他例は、ヤスリ盤３の側面に爪の形作り用ヤスリ面１５を設けたものである。これにより、一つの電動式爪磨き器で、爪の表面を磨くことと爪の先端部の形作りを行い得るものであり、効率良い爪の手入れを行い得るものである。

【００２４】図１１に示す実施の形態の他例は、円盤状のヤスリ盤３の側面に甘皮押し用の突起１６を設けたものである。これにより、一つの電動式爪磨き器で、爪の表面を磨くことと甘皮押しの両方を行い得るものであり、効率よい爪の手入れを行い得るものである。

【００２５】

【発明の効果】上記のように本発明の請求項１記載の電動式爪磨き器にあっては、爪磨き器本体から突出した先端にヘッド部を設け、ヘッド部に先端方向と略直交した回転軸芯を有するヤスリ盤を回動自在に配置し、上記ヤスリ盤の表面に爪の表面を接触させるヤスリ面を形成し、ヤスリ盤の裏面と連結してヤスリ盤に回転揺動運動を与える駆動部を爪磨き器本体に設けたので、爪磨き器本体から突出した先端のヘッド部に先端方向と略直交した方向にヤスリ面の面を成すことで、ヤスリ面と爪の表面とを面接触にすることができ、ヤスリ面を爪の表面に接触し易くすると共に、仕上がりに時間をかけない、使い勝手のよい電動式爪磨き器にできるものであり、また、ヤスリ面と爪の表面との面接触はヤスリ面と爪の表面とを適度な面圧で接触させるものであり、先端方向と略直交した回転軸芯を有すると共に上記回転軸芯周りに回転揺動運動をするヤスリ盤の表面に設けたヤスリ面は、ヤスリ盤と共に回転軸芯周りの回転揺動運動をするものであるので、ヤスリ面が爪の表面を適度な面圧で磨くことになり、爪に伝わる振動を小さくすると共に、爪の表面の仕上がりを綺麗にできるものである。

【００２６】また、本発明の請求項２記載の電動式爪磨き器は、請求項１の効果に加えて、ヤスリ盤を略円盤状に形成し、上記ヤスリ盤の表面の中心に凹所を穿設すると共に上記凹所の外周側の表面にヤスリ面を設けたので、ヤスリ面を爪の表面の形状に合わせて安定して接触させることができるものであり、また、ヤスリ面と爪の表面との接触する部分も使用者から見易いものであり、使い勝手のよい電動式爪磨き器にできるものである。

【００２７】また、本発明の請求項３記載の電動式爪磨き器は、請求項１または請求項２のいずれかの効果に加えて、ヤスリ盤を略円盤状に形成し、上記ヤスリ盤の表面の中心に凹所を穿設すると共に上記凹所の外周側の表

面にヤスリ面を設け、上記凹所に爪磨き用オイルを含ませた潤滑部材を配置したので、爪の表面と潤滑部材を接触させて爪の表面に爪磨き用オイルを塗布しながらヤスリ面で爪の表面を磨くことができるものであり、更に、爪の表面の仕上がりを綺麗にできるものである。

【００２８】また、本発明の請求項４記載の電動式爪磨き器は、請求項３の効果に加えて、ヤスリ盤の裏面方向のヘッド部に押釦を設け、上記押釦の操作で上記潤滑部材をヤスリ盤の表裏方向に動かし得るようにしたので、必要なときにだけ、押釦を操作して上記潤滑部材を爪の表面に接触させて爪磨き用オイルを爪の表面に塗布することができるものであり、爪の表面の爪磨きを効率良くするものであり、また、爪の表面の仕上がりを綺麗にできるものである。

【００２９】また、本発明の請求項５記載の電動式爪磨き器は、請求項１乃至請求項４のいずれかの効果に加えて、円盤状のヤスリ盤の表面にヤスリ面盤を装着し、ヤスリ盤の回転軸芯を中心とした略扇形状で上記回転軸芯に対して点対称位置に配置した２種類の粗ヤスリ面を上記ヤスリ面盤の表面に設け、ヤスリ面盤の表面の約半分を被覆するカバー体をヘッド部に設け、一方の粗ヤスリ面を表面に露出すると共に他方の粗ヤスリ面をカバー体で隠すようにヤスリ面盤をヤスリ盤に反転自在にし、ヤスリ盤の揺動回転運動が（１８０°－粗ヤスリ面の略扇形の中心角度）／２以下の角度の範囲で行われるようにしたので、ヤスリ盤の回転軸芯を中心とした略扇形状で、且つ、上記回転軸芯に対して点対称位置に２種類の粗ヤスリ面を配置したヤスリ面盤をヤスリ盤の表面に装着し、ヤスリ面盤の表面の約半分を被覆するカバー体をヘッド部に設けたことから、上記２種類の粗ヤスリ面のうち一つの粗ヤスリ面のみ表面に露出させることができるものであり、また、ヤスリ面盤がヤスリ盤に対して反転自在に装着されることから、表面に露出させる一方の粗ヤスリ面を他方の粗ヤスリ面に簡単に変更できるものであり、また、ヤスリ盤の揺動回転運動が（１８０°－粗ヤスリ面の略扇形の中心角度）／２以下の角度の範囲で行われるようにしたことから、ヤスリ盤が回転揺動運動をしても一方の粗ヤスリ面のみ表面に露出され続けることができるものであり、１つの電動爪磨き器で２種類の粗ヤスリ面を選択的に使うことができるために使い勝手のよい電動爪磨き器にするものである。

【００３０】また、本発明の請求項６記載の電動式爪磨き器は、請求項１乃至請求項４のいずれかの効果に加えて、ヤスリ盤の約半分に切欠部を設け、表裏に種類の違う粗ヤスリ面を設けた粗ヤスリ片を上記切欠部に蝶番等を介して回転自在に取り付け、ヤスリ盤の表面に上記２種類の粗ヤスリ面の一方を選択的に露出したので、ヤスリ盤の半分に切欠部を設け、表裏に種類の違う粗ヤスリ面を設けた粗ヤスリ片を上記切欠部に蝶番等を介して回転自在に取り付けたことで、ヤスリ盤の表面に上記２種類の粗ヤスリ面の一方を選択的に露出させて、上記粗ヤスリ面を回転揺動させることができ、１つの電動爪磨き器で２種類の粗ヤスリ面を選択的に使うことができるために使い勝手のよい電動爪磨き器にするものである。

【００３１】また、本発明の請求項７記載の電動式爪磨き器は、請求項１乃至請求項６のいずれかの効果に加えて、円盤状のヤスリ盤の側面に爪の形作り用ヤスリ面を設けたので、一つの電動式爪磨き器で、爪の表面を磨くことと爪の先端部の形作りを行い得るものであり、効率良い爪の手入れを行い得るものである。

【００３２】また、本発明の請求項８記載の電動式爪磨き器は、請求項１乃至請求項７のいずれかの効果に加えて、円盤状のヤスリ盤の側面に甘皮押し用の突起を設けたので、一つの電動式爪磨き器で、爪の表面を磨くことと甘皮押しの両方を行い得るものであり、効率よい爪の手入れを行い得るものである。

【図面の簡単な説明】

【図１】本発明の実施の形態の例を示すものであり、（ａ）は側面断面図であり、（ｂ）は上面断面図である。

【図２】同上の斜視図である。

【図３】同上の実施の形態の他例（ヤスリ盤の表面に凹所を設けた）を示すものであり、（ａ）は斜視図であり、（ｂ）は側面断面図である。

【図４】同上の実施の形態の他例（ヤスリ盤の表面に設けた凹所に爪磨き用オイルを含ませた潤滑部材を設けた）を示すものであり、（ａ）は斜視図であり、（ｂ）は側面断面図である。

【図５】同上の実施の形態の他例（潤滑部材を表裏に移動させる押釦をヘッド部に設けたもの）を示すものであり、（ａ）は斜視図であり、（ｂ）は側面断面図である。

【図６】同上の実施の形態の他例（２種類の粗ヤスリ面を設けたヤスリ面盤をヤスリ盤に装着し、ヘッド部にカバー体を設けたもの）を示すものであり、（ａ）は斜視図であり、（ｂ）は側面断面図である。

【図７】図６（ｂ）のＡ－Ａ線断面図である。

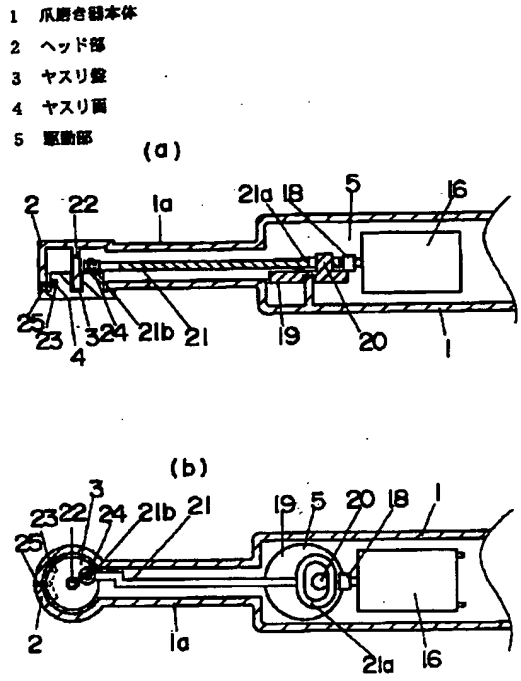
【図８】同上の実施の形態の他例（両面に２種類の粗ヤスリ面を設けた粗ヤスリ片をヤスリ盤の切欠部に装着したもの）の粗ヤスリ片を切欠部に収納した状態を示すものであり、（ａ）は斜視図であり、（ｂ）は側面断面図である。

【図９】同上の実施の形態の他例（両面に２種類の粗ヤスリ面を設けた粗ヤスリ片をヤスリ盤の切欠部に装着したもの）の粗ヤスリ片を蝶番を介して折り返した状態を示すものであり、（ａ）は斜視図であり、（ｂ）は側面断面図である。

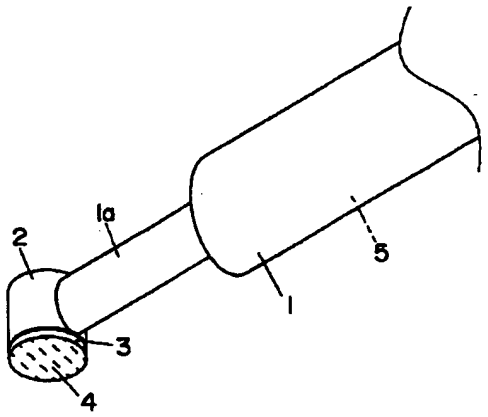
【図１０】同上の実施の形態の他例（ヤスリ盤の側面に爪の形作り用ヤスリ面を設けたもの）を示す斜視図である。

【図１１】同上の実施の形態の他例（ヤスリ盤の側面に甘皮押し用の突起を設けたもの）を示す斜視図である。
【図１２】従来技術の例を示す斜視図である。
【図１３】従来技術の他例を示す斜視図である。
【符号の説明】
1　爪磨き器本体
2　ヘッド部
3　ヤスリ盤
4　ヤスリ面
5　駆動部
6　凹所
7　潤滑部材
8　押釘
9　ヤスリ面盤
10　粗ヤスリ面
11　カバー体
12　切欠部
13　粗ヤスリ片
14　蝶番
15　型作り用ヤスリ面

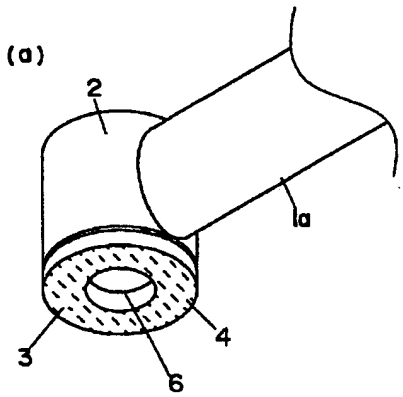
【図1】



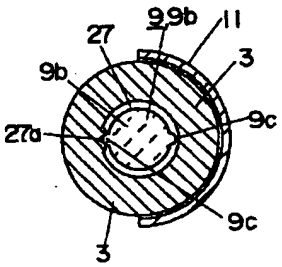
【図2】



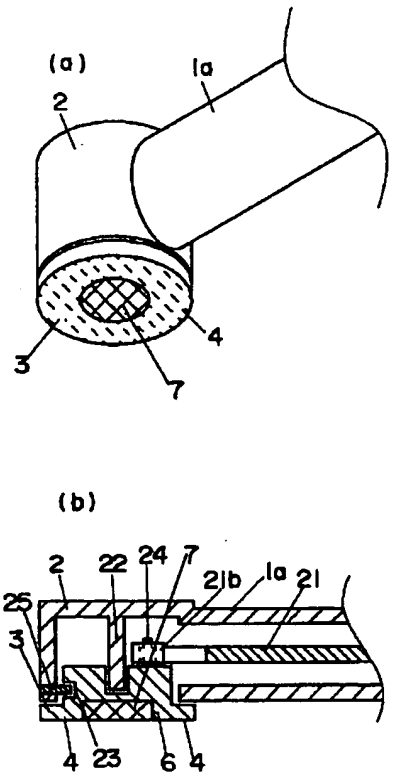
【図3】



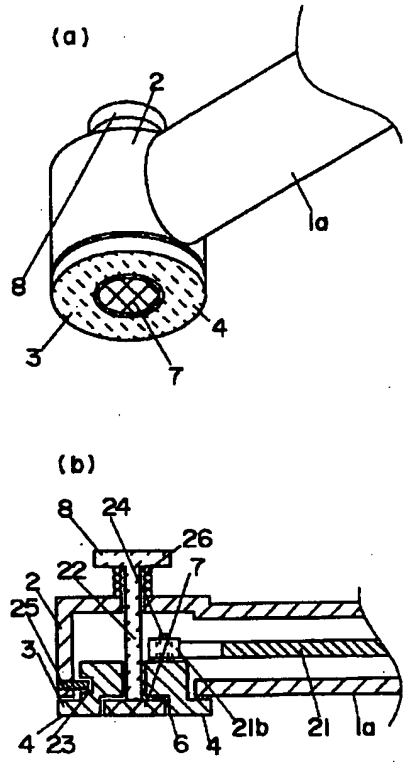
【図7】



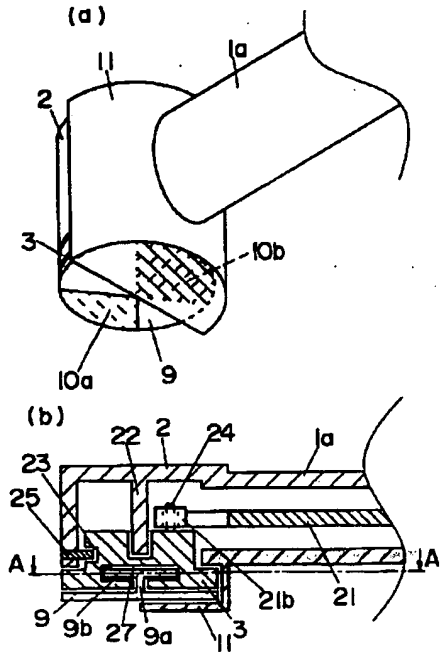
【図4】


(a)
1a
2
4
3
7
(b)
2
22
24
7
21b
1a
21
25
3
4
23
6
4

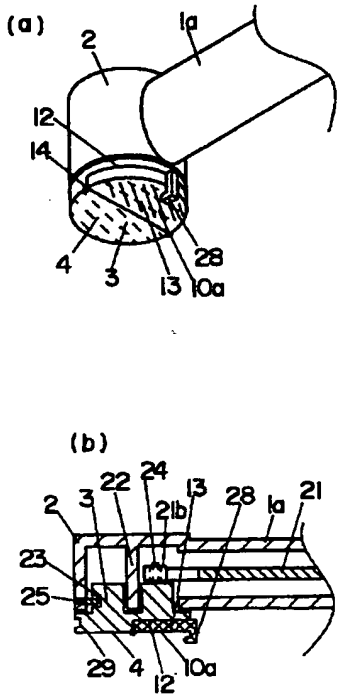
【図5】


(a)
2
1a
8
4
3
7
(b)
8
24
26
22
7
2
25
3
4
23
6
4
21b
21
1a

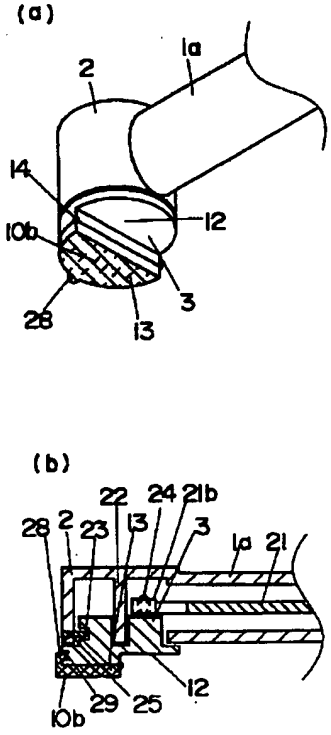
【図6】


(a)
11
1a
2
3
10b
10a
9
(b)
22
2
24
1a
23
25
A
1A
21b
21
9
9b
27
9a
11
3

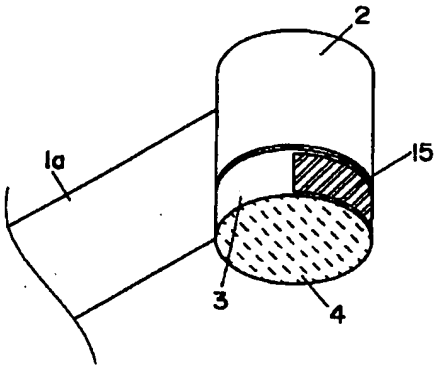
【図8】


(a)
2
1a
12
14
4
3
28
13
10a
(b)
2
3
22
24
13
28
1a
21
21b
23
25
29
4
12
10a

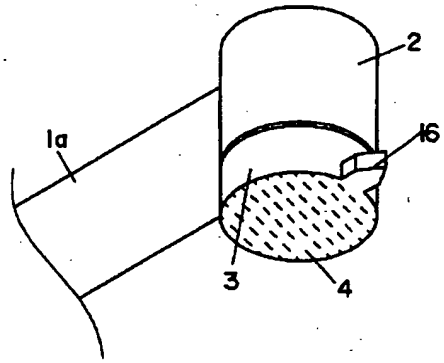
【図9】


(a)
2
1a
14
12
10b
28
13
3
(b)
28
2
23
22
24
21b
13
3
1a
21
10b
29
25
12

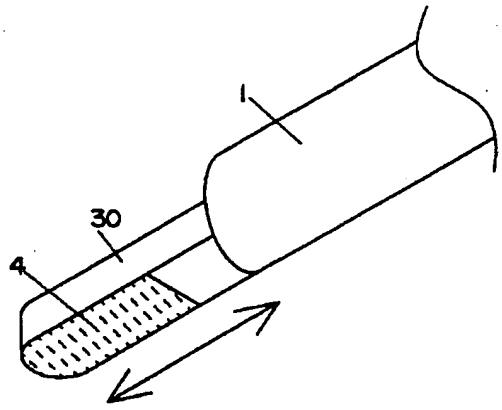
【図10】



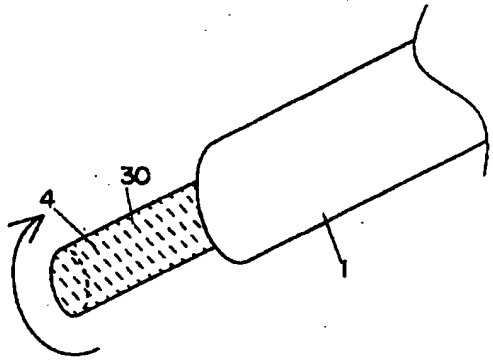
【図11】



【図12】



【図13】



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TITLE: ELECTRIC NAIL POLISHER

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APPL-NO: JP2000155540

APPL-DATE: May 26, 2000

INT-CL (IPC): A45D029/14, B23D067/06

ABSTRACT:

PROBLEM TO BE SOLVED: To provide an electric nail polisher whose file face is easily touched to the nail surface, and which gives a beautiful finish of the nail surface.

SOLUTION: A head section 2 is arranged to the tip protruded from the nail polisher 1. To the head section 2 is rotatably arranged a file disc 3 whose rotational axis is nearly perpendicular to the tip direction. A file surface 4 which contacts the surface of the nail is formed on the surface of the file disc 4. In the nail polisher body 1 is arranged a driving unit 5, which is connected with the back of the file disc 3 and gives a rotational oscillation movement to the file disc 3.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The example of the gestalt of operation of this invention is shown, (a) is a side-face sectional view and (b) is a top-face sectional view.

[Drawing 2] It is a perspective view same as the above.

[Drawing 3] The other examples (the hollow was established in the front face of the file board) of the gestalt of operation same as the above are shown, (a) is a perspective view and (b) is a side-face sectional view.

[Drawing 4] The other examples (the lubrication member in which the oil for pawl polishing was included was prepared in the hollow established in the front face of the file board) of the gestalt of operation same as the above are shown, (a) is a perspective view and (b) is a side-face sectional view.

[Drawing 5] The other examples (what formed the push button which moves a lubrication member to a front flesh side in the head section) of the gestalt of operation same as the above are shown, (a) is a perspective view and (b) is a side-face sectional view.

[Drawing 6] The other examples (what equipped the file board with the file velum which established two kinds of rough file sides, and prepared the covering object in the head section) of the gestalt of operation same as the above are shown, (a) is a perspective view and (b) is a side-face sectional view.

[Drawing 7] It is the A-A line sectional view of drawing 6 (b).

[Drawing 8] The condition of having contained to the notch the rough file piece of the other examples

(what equipped the notch of the file board with the rough file piece which established two kinds of rough file sides in both sides) of the gestalt of operation same as the above is shown, (a) is a perspective view and (b) is a side-face sectional view.

[Drawing 9] The condition of having turned up the rough file piece of the other examples (what equipped the notch of the file board with the rough file piece which established two kinds of rough file sides in both sides) of the gestalt of operation same as the above through the hinge is shown, (a) is a perspective view and (b) is a side-face sectional view.

[Drawing 10] It is the perspective view showing the other examples (a pawl forming on the side face of the file board business thing which established the file side) of the gestalt of operation same as the above.

[Drawing 11] It is the perspective view showing the other examples (what prepared the projection for cuticle push in the side face of the file board) of the gestalt of operation same as the above.

[Drawing 12] It is the perspective view showing the example of the conventional technique.

[Drawing 13] It is the perspective view showing the other examples of the conventional technique.

[Description of Notations]

1 Body of Pawl Polishing Machine
2 Head Section
3 File Board
4 File Side
5 Actuator
6 Hollow
7 Lubrication Member
8 Push Button
9 File Velum
10 Rough File Side
11 Covering Object
12 Notch
13 Rough File Piece

14 Hinge

15 File Side for Making Mold

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[Field of the Invention]

[0001] This invention is invention about the electromotive pawl polishing machine for care and cleaning of the pawl which polishes the front face of a pawl or prepares the head configuration of a pawl.

[Description of the Prior Art]

[0002] What is shown in the electromotive pawl polishing machine for care and cleaning of a pawl which polishes the front face of a pawl or prepares the head configuration of a pawl from the former at drawing 12 or drawing 13 is known. It has protruded toward the head, and the file rod 30 equipped with the file side 4 from the body 1 of a pawl polishing machine connects each thing shown in this drawing 12 and drawing 13 with the actuator by which this file rod 30 was formed in the body 1 of a pawl polishing machine, and it carries out predetermined motion. What is shown in drawing 12 has established the file side 4 contacted on a pawl in a part for the point on this plate surface while forming the file rod 30 in tabular. And this file rod 30 carries out both-way rectilinear motion to the point back. Moreover, what is shown in drawing 13 has established the file side 4 contacted on a pawl in this cylinder side face while forming the file rod 30 in the shape of a cylinder. And this file rod 30 carries out rotation of the circumference of the revolving-shaft heart of the point back.

[Problem(s) to be Solved by the Invention]

[0003] However, it sets for the former example shown in drawing 12 . Since the front face of a pawl is polished only in the direction which is used for it in many cases, making a both-way rectilinear motion of the file side 4 meet in the direction which carries out an abbreviation rectangular cross to the expanding direction of a pawl, and carries out an abbreviation rectangular cross to the expanding direction of a pawl There was a problem that a result of the front face of a pawl took time amount, the oscillation which gets across to a pawl was large, or the file side in contact with the front face of a pawl could not be in sight easily from a user. Moreover, in the latter example shown in drawing 13 , since the file side 4 is established in the cylindrical side face The front face and the file side 4 of a pawl carry out line contact, and enlarge planar pressure which starts on the surface of a pawl, and the front face of a pawl is deleted in respect of [4] a file. Since a result of the front face of a pawl can become dirty or it cannot be made to contact so that the file side 4 of ****** may be made to meet in the direction of a front face of a pawl

to the configuration of the front face of the pawl which is ****** which projects lightly It was a thing with the problem of being hard to contact the above-mentioned file side 4 on the surface of a pawl.

[0004] This invention is made in view of the above-mentioned point, and while carrying out that it is easy to contact a file side on the surface of a pawl, let it be a technical problem to offer the electromotive pawl polishing machine which can also expect a beautiful result of the front face of a pawl.

[Means for Solving the Problem]

[0005] The electromotive pawl polishing machine applied to claim 1 of this invention in order to solve the above-mentioned technical problem Form the head section 2 at the head which projected from the body 1 of a pawl polishing machine, and the file board 3 which has the revolving-shaft heart which carried out the abbreviation rectangular cross with the direction of a head in the head section 2 is arranged, enabling free rotation. It is characterized by establishing the actuator 5 which forms in the front face of the above-mentioned file board 3 the file side 4 to which the front face of a pawl is contacted, connects with the rear face of the file board 3, and gives revolution splash motion to the file board 3 in the body 1 of a pawl polishing machine. Since this established the file side 4 which constituted the field in the direction of a head, and the direction which carried out the abbreviation rectangular cross at the head section 2 at the head which projected from the body 1 of a pawl polishing machine Can carry out contact on the file side 4 and the front face of a pawl to field contact, and while making it easy to contact on the surface of a pawl, the file side 4 It is what is made to the user-friendly electromotive pawl polishing machine which does not spend many hours on a result. Moreover, field contact on the file side 4 and the front face of a pawl is what can contact the file side 4 and the front face of a pawl by moderate planar pressure. The file side 4 established in the front face of the file board 3 which carries out revolution splash motion to the circumference of the above-mentioned revolving-shaft heart while having the revolving-shaft heart which carried out the abbreviation rectangular cross with the direction of a head Since revolution splash motion of the circumference of the revolving-shaft heart is carried out with the file board 3, the file side 4 will polish the front face of a pawl by moderate planar pressure, and while making small the oscillation from which it is transmitted to a pawl, a result of the front face of a pawl can be cleaned.

[0006] Moreover, in claim 1, the electromotive pawl polishing machine concerning claim 2 of this invention is characterized by establishing the file side 4 in the front face by the side of the periphery of the above-mentioned hollow 6 while it forms the file board 3 in the shape of the approximate circle board and drills a hollow 6 in the core of the front face of the above-mentioned file board 3. By this, according to the configuration of the front face of a pawl, it can be stabilized, the file side 4 can be contacted, and the part of the file side 4 and the front face of a pawl which contacts also makes it legible from a user, and it is made to a user-friendly electromotive pawl polishing machine.

[0007] Moreover, in either claim 1 or claim 2, the electromotive pawl polishing machine concerning claim 3 of this invention forms the file board 3 in the shape of the approximate circle board, it establishes the file side 4 in the front face by the side of the periphery of the above-mentioned hollow 6 while it drills a hollow 6 in the core of the front face of the above-mentioned file board 3, and it is characterized by having arranged the lubrication member 7 in which the oil for pawl polishing was included in the above-mentioned hollow 6. The front face of a pawl can be polished in respect of [4] a file, contacting the front face and the lubrication member 7 of a pawl, and applying the oil for pawl polishing on the surface of a pawl by this, and a result of the front face of a pawl can be cleaned further.

[0008] Moreover, in claim 3, the electromotive pawl polishing machine concerning claim 4 of this invention forms a push button 8 in the head section 2 of the direction of a rear face of the file board 3, and is characterized by enabling it to move the above-mentioned lubrication member 7 in the direction of a front flesh side of the file board 3 by actuation of the above-mentioned push button 8. Thereby, only when required, a push button 8 can be operated, the above-mentioned lubrication member 7 can be contacted on the front face of a pawl, the oil for pawl polishing can be applied on the surface of a pawl, pawl polishing of the front face of a pawl is made efficient, and a result of the front face of a pawl can be cleaned.

[0009] Moreover, the electromotive pawl polishing machine concerning claim 5 of this invention In either claim 1 thru/or claim 4, the front face of the disc-like file board 3 is equipped with the file velum 9. Two kinds of rough file sides 10a and 10b arranged in the point symmetry location to the above-mentioned revolving-shaft heart by the shape of an abbreviation sector centering on the revolving-shaft heart of the file board 3 are established in the front face of the above-mentioned file velum 9. The covering object 11 which covers the abbreviation one half of the front face of the file velum 9 is formed in the head section 2. Reversal of the file velum 9 to the file board 3 is enabled so that rough file side 10b of another side may be hidden with the covering object 11, while exposing one rough file side 10a to a front face. It is characterized by performing splash rotation of the file board 3 in the range of (the main include angle of the abbreviation sector of a 180 degree-rough file side) / two or less include angle. Two kinds of rough file sides 10a and 10b which equipped the front face of the disc-like file board 3 with the file velum 9 by this, formed in the shape of [centering on the revolving-shaft heart of the file board 3] an abbreviation sector, and have been arranged in the point symmetry location to the above-mentioned revolving-shaft heart are established in the front face of the above-mentioned file velum 9. From having formed the covering object 11 which covers the abbreviation one half of the front face of the file velum 9 in the head section 2 It is what can expose only one rough file side 10a on a front face among the two above-mentioned kinds of rough file sides 10a and 10b. moreover, from being equipped with the file velum 9

free [reversal] to the file board 3 It is what while exposes on a front face and can change rough file side 10a easily [rough file side 10b of another side]. moreover, from splash rotation of the file board 3 having been made to be performed in the range of (the main include angle of the abbreviation sector of a 180 degree-rough file side) / two or less include angle Since it can continue exposing only one rough file side 10a on a front face and one electric pawl polishing machine can use two kinds of rough file sides selectively even if the file board 3 carries out revolution splash motion, it is made a user-friendly electric pawl polishing machine.

[0010] Moreover, the electromotive pawl polishing machine concerning claim 6 of this invention In either claim 1 thru/or claim 4, a notch 12 is formed in the abbreviation one half of the file board 3. It is characterized by exposing selectively one side of the two above-mentioned kinds of rough file sides 10a and 10b to a front flesh side for the rough file piece 13 which established the rough file sides 10a and 10b where a class is different on the front face of installation and the file board 3 free [a revolution] through hinge 14 grade at the above-mentioned notch 12. By having attached in the above-mentioned notch 12 the rough file piece 13 which formed the notch 12 in the one half of the file board 3, and established by this the rough file sides 10a and 10b where a class is different on the front reverse side free [a revolution] through the hinge 14 grade One side of the two above-mentioned kinds of rough file sides 10a and 10b can be selectively exposed on the front face of the file board 3, and since one electric pawl polishing machine can use two kinds of rough file sides selectively, it is made a user-friendly electric pawl polishing machine.

[0011] moreover, the electromotive pawl polishing machine concerning claim 7 of this invention -- either claim 1 thru/or claim 6 -- setting -- the side face of the disc-like file board 3 -- a pawl -- forming -- business -- it is characterized by establishing the file side 15. Thereby, it is one electromotive pawl polishing machine, and it can perform making the form of the point of polishing the front face of a pawl, and a pawl, and an efficient pawl can be taken care of.

[0012] Moreover, the electromotive pawl polishing machine concerning claim 8 of this invention is characterized by forming the projection 16 for cuticle push in the side face of the disc-like file board 3 in either claim 1 thru/or claim 7. Thereby, it is one electromotive pawl polishing machine, and both polishing the front face of a pawl and cuticle push can be performed, and an efficient pawl can be taken care of.

[Embodiment of the Invention]

[0013] Hereafter, this invention is explained based on the operation gestalt shown in an accompanying drawing.

[0014] Drawing 1 thru/or the example of the gestalt of the operation of this invention to 2 are shown. An electromotive pawl polishing machine forms the head section 2 at the head of a projection and the above-mentioned neck section 1a for neck section 1a formed in the direction of a head in the shape of tubing from the body 1 of a pawl polishing machine. The inner package of the actuator 5 which consists of a motor 16, a crank chain, etc. is carried out to the body 1 of a pawl polishing machine. This crank chain changes revolution actuation of a motor 16 into a both-way rectilinear motion of the point back. Speaking concretely, having equipped the revolving shaft of a motor 16 with the pinion gear 18, having adjoined the above-mentioned pinion gear 18 in the contrate gear 19, having protruded the eccentric projection 20 on the location which is distant from the revolving-shaft heart of a contrate gear 19 in the top face of the above-mentioned contrate gear 19, and having fitted in loosely annular section 21a of the crank rod 21 a head is made [crank] to connect [crank / section / 2 / head], and the above-mentioned eccentric projection 20. Thereby, in response to revolution actuation of a motor 16, the crank rod 21 carries out both-way rectilinear motion of the point back. In addition, the inner package of this crank rod 21 is carried out to neck section 1a, it connects the head of the crank rod 21 with the file board 3 of the head section 2, and makes a both-way rectilinear motion of the point back transmit to the above-mentioned file board 3.

[0015] The head section 2 connected with neck section 1a, it was formed in the direction of a head, and the direction which carried out the abbreviation rectangular cross in the shape of [which carries out opening] a cylinder like object with base, and a revolving shaft 22 protruded in the interior in the direction of a head, and the direction which carries out an abbreviation rectangular cross, and it has equipped free [the rotation to the above-mentioned revolving shaft 22] so that the above-mentioned opening of the head section 2 may plug up for the file board 3 formed disc-like, and a field may accomplish in the direction of a head, and the direction which carried out the abbreviation rectangular cross. While establishing the file side 4 to which the front face of a pawl is contacted in the front face of the file board 3, the transmission pin 24 is protruded on the location which is distant from a revolving shaft 22 in the rear face of the file board 3. Moreover, the guide rail 23 is drilled in a part of part contained by the head section 2 of the side face of the file board 3. The above-mentioned transmission pin 24 is connected with pin-connection section 21b prepared at the head of the crank rod 21 free [rotation], a both-way rectilinear motion of the point back of the crank rod 21 is transmitted to the file board 3, and the file board 3 carries out revolution splash motion centering on a revolving shaft 22. In addition, the guide pins 25 which made the method of inside project from the side face of the head section 2 are inserted in the above-mentioned guide rail 23, and the omission stop of the file board 3 is carried out. If the electromotive pawl polishing machine which carried out the above configurations carries out revolution actuation of the motor 16, the above-mentioned actuation will be transmitted to the

file board 3 through a crank chain, and the above-mentioned file board 3 will continue revolution splash motion of the circumference of the revolving shaft 22 which carried out the abbreviation rectangular cross with the direction of a head.

[0016] Such an electromotive pawl polishing machine has the body 1 of a pawl polishing machine by one hand, contacts the file side 4 of the head section 2 on the front face of pawls, such as a hand of another side, and polishes the front face of a pawl. Since field contact is carried out and it can contact if the file side 4 of the head section 2 constitutes a field in the direction of a head of an electromotive pawl polishing machine, and the direction which carried out the abbreviation rectangular cross and the front face of a pawl is contacted to this file side 4 as mentioned above Since the large range which is easy to contact the file side 4 on the surface of a pawl, and makes field contact the file side 4 and the front face of a pawl, and polishes the front face of a pawl can also be taken A result can also be made beautiful by it being unable to be necessary to spend many hours on a result, and contacting the file side 4 and the front face of a pawl by moderate planar pressure, and polishing the front face of a pawl.

[0017] Hereafter, the other examples of the gestalt of operation are explained. Since the other examples of the gestalt of the following operations change a part of example of the gestalt of the above-mentioned operation, explanation of the overlapping part will be omitted and will be described focusing on a point of difference.

[0018] The other examples of the gestalt of operation shown in drawing 3 establish the file side 4 in the front face by the side of the periphery of the above-mentioned hollow 6 while drilling a hollow 6 in the core of the front face of the file board 3. ****** of the front face of the pawl which is ****** which projects lightly above a finger by doing in this way by containing lightly to a hollow 6 While field contact can be carried out still more greatly so that the file side 4 may be made to meet on the surface of a pawl, and carrying out beautiful [of the result] further The time amount concerning a result can also be shortened, and the part of the file side 4 and the front face of a pawl which contacts can also be made legible from a user, and the user-friendliness of an electromotive pawl polishing machine is raised.

[0019] The other examples of the gestalt of operation shown in drawing 4 establish the file side 4 in the front face by the side of the periphery of the above-mentioned hollow 6 while drilling a hollow 6 in the core of the front face of the file board 3, and they arrange the lubrication member 7 in which the oil for pawl polishing was included in the above-mentioned hollow 6. By doing in this way, the front face of a pawl can be polished in respect of [4] a file, applying the oil for pawl polishing on the surface of a pawl, and a result of the front face of a pawl can be cleaned further.

[0020] The other examples of the gestalt of operation shown in drawing 5 form a push button 8 in the edge of the head section 2 of the direction of a rear face of the file board 3, and enable it to move the lubrication member 7 in which the oil for pawl polishing was included by actuation of the above-mentioned push button 8 in the direction of a front flesh side of the file board 3. This inserts in installation the lubrication member 7 which included the oil for pawl polishing in the other end while forming a push button 8 in the end of a revolving shaft 22, it inserts the above-mentioned revolving shaft 22 in the head section 2 and the file board 3, it locates a push button 8 in the exterior of the direction of a rear face of the file board 3 of the head section 2 while it locates the lubrication member 7 in the hollow 6 of the file board 3, and it makes a spring 26 intervene between a push button 8 and the head section 2. It is that to which the lubrication member 7 projects in the direction of a front face of the file board 3 from a hollow 6 by stuffing a push button 8 into the head section by doing in this way. Only when required, a push button 8 can be operated, the above-mentioned lubrication member 7 can be contacted on the surface of a pawl, the oil for pawl polishing can be applied on the surface of a pawl, pawl polishing of the front face of a pawl is made efficient, and a result of the front face of a pawl can be cleaned.

[0021] The other examples of the gestalt of operation shown in drawing 6 and drawing 7 form two kinds of rough file sides 10a and 10b in the front face of the file velum 9 with which the front face of the file board 3 was equipped, and while exposing selectively one of the two above-mentioned kinds of rough file sides 10a and 10b on the front face of the file velum 9, they are made they to carry out a revolution splash. If it explains in full detail, on the front face of the file velum 9 formed disc-like like the file board 3, it will have the shape of an abbreviation sector centering on the central point of the file velum 9, and two kinds of rough file sides 10a and 10b will be arranged to the above-mentioned central point in the point symmetry location. The main include angle of the shape of an abbreviation sector of this rough file side is less than at least 180 degrees. The file velum 9 has prepared stop piece 9b at the head of the above-mentioned shaft while making shaft 9a project at the rear face. And in the periphery edge of stop piece 9b, two stop projections 9c and 9c protrude on the opposite location of stop piece 9b in the direction of a periphery. Moreover, the stop crevice 27 was drilled in the file board 3, and stop projection receptacle section 27a is prepared in the above-mentioned stop crevice 27. Thus, the formed file velum 9 inserted stop piece 9b in the stop crevice 27, and has equipped the front face of the file board 3 with the file velum 9. Stop projection receptacle section 27a is made to stop any one of the stop projections 9c and 9c at this time. Moreover, the covering object 11 which covers the abbreviation one half of the front face of the above-mentioned file velum 9 is formed in the head section 2. By establishing this covering object 11, it comes (rough file side 10b of another side is hidden with the covering object 11) to expose only one rough file [any] side 10a of the rough file sides 10a and 10b to a front face. Here, the

file velum 9 can be rotated to the file board 3, and rough file side 10b of another side can be exposed on a front face by making stop projection receptacle section 27a stop one stop projection 9c of another side which is not the thing which the point of the stop projections 9c and 9c was made to stop to stop projection receptacle section 27a. Thus, the file board 3 is equipped with the file velum 9 free [reversal]. Moreover, splash rotation of the file board 3 is made to be performed in the range of (the main include angle of the abbreviation sector of a 180 degree-rough file side) / two or less include angle. Even if the file board 3 carries out revolution splash motion, while was exposed to the front face and thereby, exposing only rough file side 10a on a front face can be continued. Thus, since two kinds of rough file sides 10a and 10b can be selectively used for the constituted electric pawl polishing machine with one electric pawl polishing vessel, it can raise user-friendliness.

[0022] The other examples of the gestalt of operation shown in drawing 8 and drawing 9 attach in the above-mentioned notch 12 the rough file piece 13 which formed the notch 12 in the one half of the file board 3, and established the rough file sides 10a and 10b where a class is different on the front reverse side free [a revolution] through hinge 14 grade. It hooks on the side face of the part of the remaining one half in which hook on the edge of a part for a connection with the hinge 14 of this rough file piece 13, and an opposite hand, and have formed the projection 28, and the notch 12 of the file board 3 is not formed, and the crevice 29 is drilled. Like drawing 9 , when the rough file piece 13 is turned up on a hinge 14, the condition of having turned up the rough file piece 13 on the hinge 14 can be maintained by making the hook crevice 29 of the file board 3 stop the hook projection 28 of the rough file piece 13. Thus, the constituted electromotive pawl polishing machine can expose selectively one side of the two above-mentioned kinds of rough file sides 10a and 10b on the front face of the file board 3, and since two kinds of rough file sides can be selectively used for it with one electric pawl polishing vessel, it can raise user-friendliness.

[0023] the other examples of the gestalt of operation shown in drawing 10 -- the side face of the file board 3 -- a pawl -- forming -- business -- the file side 15 is established. Thereby, it is one electromotive pawl polishing machine, and it can perform making the form of the point of polishing the front face of a pawl, and a pawl, and an efficient pawl can be taken care of.

[0024] The other examples of the gestalt of operation shown in drawing 11 form the projection 16 for cuticle push in the side face of the disc-like file board 3. Thereby, it is one electromotive pawl polishing machine, and both polishing the front face of a pawl and cuticle push can be performed, and an efficient pawl can be taken care of.

[Effect of the Invention]

[0025] If it is in the electromotive pawl polishing machine of this invention according to claim 1 as mentioned above Prepare the head section at the head which projected from the body of a pawl polishing machine, and the file board which has the revolving-shaft heart which carried out the abbreviation rectangular cross with the direction of a head in the head section is arranged, enabling free rotation. Since the actuator which forms in the front face of the above-mentioned file board the file side to which the front face of a pawl is contacted, connects with the rear face of the file board, and gives revolution splash motion to the file board was established in the body of a pawl polishing machine By accomplishing the field of a file side in the direction of a head, and the direction which carried out the abbreviation rectangular cross in the head section at the head which projected from the body of a pawl polishing machine Can make a file side and the front face of a pawl field contact, and while making it easy to contact on the surface of a pawl, a file side It is what is made to the user-friendly electromotive pawl polishing machine which does not spend many hours on a result. Moreover, field contact on a file side and the front face of a pawl is that to which a file side and the front face of a pawl are contacted by moderate planar pressure. The file side established in the front face of the file board which carries out revolution splash motion to the circumference of the above-mentioned revolving-shaft heart while having the revolving-shaft heart which carried out the abbreviation rectangular cross with the direction of a head Since revolution splash motion of the circumference of the revolving-shaft heart is carried out with the file board, a file side will polish the front face of a pawl by moderate planar pressure, and while making small the oscillation from which it is transmitted to a pawl, a result of the front face of a pawl can be cleaned.

[0026] Moreover, the electromotive pawl polishing machine of this invention according to claim 2 Since the file side was established in the front face by the side of the periphery of the above-mentioned hollow while in addition to the effectiveness of claim 1 forming the file board in the shape of the approximate circle board and drilling the hollow in the core of the front face of the above-mentioned file board According to the configuration of the front face of a pawl, it can be stabilized and a file side can be contacted, and the part of a file side and the front face of a pawl which contacts is also legible from a user, and it is made to a user-friendly electromotive pawl polishing machine.

[0027] Moreover, the electromotive pawl polishing machine of this invention according to claim 3 In addition to the effectiveness of either claim 1 or claim 2, the file board is formed in the shape of the approximate circle board. Since the lubrication member in which the file side was established in the front face by the side of the periphery of the above-mentioned hollow, and the oil for pawl polishing was included in the above-mentioned hollow has been arranged while drilling the hollow in the core of the front face of the above-mentioned file board The front face of a pawl can be polished in respect of a file,

contacting the front face and lubrication member of a pawl and applying the oil for pawl polishing on the surface of a pawl, and a result of the front face of a pawl can be cleaned further.

[0028] Moreover, the electromotive pawl polishing machine of this invention according to claim 4 Since a push button is formed in the head section of the direction of a rear face of the file board and it enabled it to move the above-mentioned lubrication member in the direction of a front flesh side of the file board by actuation of the above-mentioned push button in addition to the effectiveness of claim 3 Only when required, a push button can be operated, the above-mentioned lubrication member can be contacted on the surface of a pawl, the oil for pawl polishing can be applied on the surface of a pawl, pawl polishing of the front face of a pawl is made efficient, and a result of the front face of a pawl can be cleaned.

[0029] Moreover, the electromotive pawl polishing machine of this invention according to claim 5 In addition to the effectiveness of either claim 1 thru/or claim 4, the front face of the disc-like file board is equipped with a file velum. Two kinds of rough file sides arranged in the point symmetry location to the above-mentioned revolving-shaft heart by the shape of an abbreviation sector centering on the revolving-shaft heart of the file board are established in the front face of the above-mentioned file velum. Reversal of a file velum to the file board is enabled so that the rough file side of another side may be hidden with a covering object, while preparing the covering object which covers the abbreviation one half of the front face of a file velum in the head section and exposing one rough file side to a front face. Since splash rotation of the file board was made to be performed in the range of (the main include angle of the abbreviation sector of a 180 degree-rough file side) / two or less include angle The front face of the file board is equipped with the file velum which has the shape of an abbreviation sector centering on the revolving-shaft heart of the file board, and has arranged two kinds of rough file sides in the point symmetry location to the above-mentioned revolving-shaft heart. From having prepared the covering object which covers the abbreviation one half of the front face of a file velum in the head section It is what can expose only one rough file side on a front face among the two above-mentioned kinds of rough file sides. moreover, from being equipped with a file velum free [reversal] to the file board It is what while exposes on a front face and can change a rough file side easily [the rough file side of another side]. moreover, from splash rotation of the file board having been made to be performed in the range of (the main include angle of the abbreviation sector of a 180 degree-rough file side) / two or less include angle Since it can continue being exposed to a front face and only one rough file side can use two kinds of rough file sides selectively with one electric pawl polishing vessel even if the file board carries out revolution splash motion, it is made a user-friendly electric pawl polishing machine.

[0030] Moreover, the electromotive pawl polishing machine of this invention according to claim 6 In addition to the effectiveness of either claim 1 thru/or claim 4, a notch is prepared in the abbreviation one

half of the file board. To the above-mentioned notch, since one side of the two above-mentioned kinds of rough file sides was selectively exposed to the front face of installation and the file board free [a revolution] through the hinge etc., the rough file piece which established the rough file side where a class is different on the front reverse side By having attached in the above-mentioned notch the rough file piece which prepared the notch in the one half of the file board, and established the rough file side where a class is different on the front reverse side free [a revolution] through the hinge etc. One side of the two above-mentioned kinds of rough file sides can be selectively exposed on the front face of the file board, and the revolution splash of the above-mentioned rough file side can be carried out, and since one electric pawl polishing machine can use two kinds of rough file sides selectively, it is made a user-friendly electric pawl polishing machine.

[0031] moreover, the electromotive pawl polishing machine of this invention according to claim 7 -- the effectiveness of either claim 1 thru/or claim 6 -- in addition, the side face of the disc-like file board -- a pawl -- forming -- business -- since the file side was established, it is one electromotive pawl polishing machine, and it can perform making the form of the point of polishing the front face of a pawl, and a pawl, and an efficient pawl can be taken care of.

[0032] moreover, the electromotive pawl polishing machine of this invention according to claim 8 -- the effectiveness of either claim 1 thru/or claim 7 -- in addition, since the projection for cuticle push was prepared in the side face of the disc-like file board, it is one electromotive pawl polishing machine, and both polishing the front face of a pawl and cuticle push can be performed, and an efficient pawl can be taken care of.

CLAIMS

[Claim(s)]

[Claim 1] The electromotive pawl polishing machine characterized by to establish the actuator which prepares the head section at the head which projected from the body of a pawl polishing machine, arranges the file board which has the revolving-shaft heart which carried out the abbreviation rectangular cross with the direction of a head in the head section, enabling free rotation, forms in the front face of the above-mentioned file board the file side to which the front face of a pawl contacts, connects with the rear face of the file board, and gives revolution splash motion to the file board in the body of a pawl polishing machine.

[Claim 2] The electromotive pawl polishing machine according to claim 1 characterized by establishing a file side in the front face by the side of the periphery of the above-mentioned hollow while forming the file board in the shape of the approximate circle board and drilling the hollow in the core of the front face of the above-mentioned file board.

[Claim 3] An electromotive pawl polishing machine given in either of claims 1 or 2 characterized by having arranged the lubrication member in which the file board was formed in the shape of the approximate circle board, the file side was established in the front face by the side of the periphery of the above-mentioned hollow while drilling the hollow centering on the front face of the above-mentioned file board, and the oil for pawl polishing was included in the above-mentioned hollow.

[Claim 4] The electromotive pawl polishing machine according to claim 3 characterized by forming a push button in the head section of the direction of a rear face of the file board, and enabling it to move the above-mentioned lubrication member in the direction of a front flesh side of the file board by actuation of the above-mentioned push button.

[Claim 5] Equip the front face of the disc-like file board with a file velum, and two kinds of rough file sides arranged in the point symmetry location to the above-mentioned revolving-shaft heart by the shape of an abbreviation sector centering on the revolving-shaft heart of the file board are established in the front face of the above-mentioned file velum. Reversal of a file velum to the file board is enabled so that the rough file side of another side may be hidden with a covering object, while preparing the covering object which covers the abbreviation one half of the front face of a file velum in the head section and exposing one rough file side to a front face. The electromotive pawl polishing machine according to claim 1 to 4 characterized by performing splash rotation of the file board in the range of (the main include angle of the abbreviation sector of a 180 degree-rough file side) / two or less include angle.

[Claim 6] The electromotive pawl polishing machine according to claim 1 to 4 characterized by exposing selectively one side of the two above-mentioned kinds of rough file sides to the above-mentioned notch for the rough file piece which prepared the notch in the abbreviation one half of the file board, and established the rough file side where a class is different on the front reverse side on the front face of installation and the file board free [a revolution] through a hinge etc.

[Claim 7] the side face of the disc-like file board -- a pawl -- forming -- business -- the electromotive pawl polishing machine according to claim 1 to 6 characterized by establishing a file side.

[Claim 8] The electromotive pawl polishing machine according to claim 1 to 7 characterized by preparing the projection for cuticle push in the side face of the disc-like file board.